

WHAT IS CLAIMED IS:

1. A personal identification apparatus
comprising:

5 a storage device configured to store specific
information of each of registered persons;

an extraction device configured to extract
specific information of an object person from the
object person;

10 a classification device configured to classify
whether the object person is included in the registered
persons by comparing the specific information of the
registered persons, which is stored in said storage
device, with the specific information of the object
person, which is extracted by said extraction device;
15 and

a registered information operation device
configured to sort an arrangement order of pieces of
the specific information of the registered persons,
which is stored in said storage device, in accordance
20 with a use situation of the registered persons, or set
whether the registered persons are to be subjected to
classification.

2. An apparatus according to claim 1, wherein
said registered information operation device changes
25 the arrangement order of pieces of the specific
information of the registered persons in accordance
with an elapse time from a preceding classification

time or a frequency of classification between the registered persons and the object person.

3. An apparatus according to claim 1, wherein when said classification device fails the
5 classification between the object person and the registered persons, said classification device executes retry using the specific information of the object person which is extracted by said extraction device.

4. An apparatus according to claim 1, wherein
10 when said classification device fails classification between the object person and the registered persons, said extraction device extracts another specific information of the object person which differs from the specific information extracted from the object person,
15 and said classification device compares the another specific information with the specific information of each of the registered persons to verify the specific information.

5. An apparatus according to claim 1, wherein
20 when said classification device fails classification between the object person and the registered persons, said classification device executes retry using the specific information of the object person extracted by said extraction device and the specific information of
25 each of the registered persons stored in said storage device.

6. An apparatus according to claim 1, wherein

said extraction device comprises a face region detector device configured to detect a face region of the object person as the specific information of the object person, a facial part detector configured to detect facial parts of the object person based on face region image information obtained by said face region detector device, and a feature extraction device configured to extract a feature of the object person based on grayscale information which is extracted for each pixel from the face region based on positional information of the facial parts.

7. An apparatus according to claim 1, wherein said storage device stores respective personal information including the specific information of the registered person, the dictionary, name of the registered person, registration number, registration date when these pieces of information are stored in said storage device, and date/time and place of identification of the registered person.

8. An apparatus according to claim 1, which comprises a presentation device configured to present information stored in said storage device together with an order in which pieces of the information are stored in said storage device.

9. An apparatus according to claim 1, wherein said registered information operation device sorts and updates information read out from said storage device

in accordance with any condition and sends sorted information to said storage device to store it therein.

10. An apparatus according to claim 1, wherein said registered information operation device comprises
5 a control determination device configured to determine a sorting method for the information stored in said storage device, compute a time required for determination of sorting, and change items of the information, a sorting device configured to sort pieces
10 of the information in accordance with the reference designated by said control determination device to change the order of pieces of the registered information, and transmit the sorted information to said registered information storage device.

11. An apparatus according to claim 10, wherein
15 said sorting device sort the pieces of information, which are arranged first in the order of registration number, in the ascending order of elapse times from the last classification of the object person and registered
20 person by means of said classification device.

12. An apparatus according to claim 10, wherein said sorting device sorts automatically the pieces of information at a predetermined time interval.

13. An apparatus according to claim 10, wherein
25 said sorting device performs automatically the sorting when classification between the registered persons and the object person has been executed.

14. An apparatus according to claim 10, wherein said sorting device performs the sorting in accordance with request of an administrator.

5 15. An apparatus according to claim 1, wherein said registered information operation device includes a selector configured to select appropriately the pieces of registered person information stored in said storage device depending on whether they are information to be identified.

10 16. An apparatus according to claim 1, wherein said storage device stores face information of the registered persons as the specific information of the registered persons, said extraction device extracts the face information of the object person as the specific
15 information of the object person, said classification device includes an ID reader configured to read the registered information and identifies the object person by computing a similarity between the face information extracted by said extraction device and face
20 information corresponding to the registered persons stored in said storage device.

25 17. An apparatus according to claim 1, wherein said classification device performs verification for only pieces of information at higher-order positions in accordance with the order of sorted information.

18. An apparatus according to claim 17, wherein said classification device performs retry by comparing

information present at a lower-order position in said storage device with the specific information of the object person when said classification device fails verification between the specific information stored in said storage device and the specific information extracted by said extraction device.

19. An apparatus according to claim 17, wherein said classification device calculates a similarity between each of a given number of pieces of information read out from said storage device and the specific information of the object person to obtain a plurality of similarities, and selects a maximum similarity from the similarities to obtain a classification result.

20. An apparatus according to claim 1, wherein said classification device performs comparison for selected pieces of the sorted information in accordance with the order of the sorted information.

21. An apparatus according to claim 20, wherein said classification device computes a similarity between each of pieces of information which are selected by a flag and read out from said storage device and the specific information of the object person and outputs a piece of information having a maximum similarity as a classification result.

22. An apparatus according to claim 17, wherein said classification device performs retry by collating a feature extracted newly by said extraction device

with each of features of the specific information read
out from said storage device when said classification
device fails verification between the specific
information stored in said storage device and the
5 specific information extracted by said extraction
device.

23. A personal identification apparatus
comprising:

10 a storage device configured to store a dictionary
including pieces of specific information of a plurality
of registered persons which are arranged in a given
order;

an extraction device configured to extract
specific information from an object person;

15 a classification device configured to classify
whether the object person is a registered person by
comparing the specific information of the object person
with the specific information contained in said
dictionary; and

20 a registered information operation device
configured to sort the pieces of information contained
in said dictionary in accordance with a use situation
of the registered person or limit the object person.

24. A personal identification method comprising:

25 storing specific information of each of registered
persons in a storage device;

extracting specific information of an object

person from the object person;

classifying whether the object person is included
in the registered persons by comparing pieces of
specific information of the registered persons, which
5 are stored in the storage device, with the specific
information of the object person, which is extracted in
the extracting step; and

sorting an order of the pieces of specific
information of the registered persons, which are stored
10 in the storage device, in accordance with a use
situation of the registered persons, or setting whether
the registered persons are to be subjected to
classification.

25. A method according to claim 24, wherein the
15 sorting step includes changing the order of the pieces
of specific information of the registered persons in
accordance with an elapse time from a preceding
classification time or a frequency of classification
between the registered persons and the object person.

20 26. A method according to claim 24, wherein when
classification fails in the classifying step, retry
operation is performed using the specific information
of the object person, which is extracted in the
extracting step, or specific information of the object
25 person, which is different from the specific
information extracted for the object person from the
object person, is extracted, and the extracted specific

information of the object person is compared with the specific information of each of the registered persons, which is stored in the storage device.

27. A method according to claim 24, wherein when
5 classification fails, the classifying step comprises performing retry operation using the specific information of the object person, which is extracted in the extracting step, and the specific information of each of the registered persons, which is stored in the
10 storage device, or the extracting step comprises extracting specific information of the object person, which is different from the specific information extracted for the object person from the object person, and the classifying step comprises comparing the
15 extracted specific information of the object person with the specific information of each of the registered persons, which is stored in the storage device.